

Title (en)

Film-based dual energy radiography.

Title (de)

Filmaufnahmen mit zwei Röntgenstrahlenergien.

Title (fr)

Radiographie sur film utilisant deux énergies de rayons X.

Publication

**EP 0137453 A2 19850417 (EN)**

Application

**EP 84111894 A 19841004**

Priority

- US 54146883 A 19831013
- US 54178583 A 19831013
- US 54178683 A 19831013

Abstract (en)

X-ray energy difference images are obtained simultaneously by exposing a body to a broad energy spectrum x-ray beam and using a planar radiographic film having photosensitive emulsions facing in opposite directions between front and rear x-ray intensifying screens. The front screen, on which the polyenergetic beam emerging from the body is incident, contains an element having a K-absorption edge so the front screen is excited to luminesces by predominantly higher energy x-ray photons and the rear screen is excited by a higher fraction of lower energy photons compared to the front screen. Grids having alternate light-opaque and light-transmissive lines can be disposed between the screens to encode or differentiate the images. Alternatively the radiographic films can be joined at one of their edges to form a pocket or a hinge and a light-opaque insert located in the pocket or between the films to accentuate the differences in x-ray energies. Alternatively the film package is laminated with a double-sided reflective sheet in the middle and a light-opaque coating on each reflective surface. In addition a shadow of a marker is formed on the film emulsion to aid in matching congruent picture elements when reading the developed films. Notches in the edges of the films and the insert can serve as a code for identifying the type of screens which can be used.

IPC 1-7

**H05G 1/60**; **G21K 4/00**; **G21K 1/10**; **H04N 5/32**

IPC 8 full level

**G03C 5/16** (2006.01); **G21K 4/00** (2006.01); **H04N 5/32** (2006.01); **H05G 1/60** (2006.01)

CPC (source: EP)

**G03C 5/16** (2013.01); **G21K 4/00** (2013.01); **H04N 5/3205** (2013.01); **H05G 1/60** (2013.01)

Cited by

EP1120686A3; EP0232888A3; EP0316686A1; US4931643A; EP0407890B1

Designated contracting state (EPC)

DE FR GB NL

DOCDB simple family (publication)

**EP 0137453 A2 19850417**; **EP 0137453 A3 19880330**; IL 73227 A0 19850131

DOCDB simple family (application)

**EP 84111894 A 19841004**; IL 7322784 A 19841012